

# GRANDVIEW RESORT (PWSNO 1090044) SOURCE WATER ASSESSMENT REPORT

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February 21, 2003



## State of Idaho Department of Environmental Quality

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## SOURCE WATER ASSESSMENT FOR GRANDVIEW RESORT

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Grandview Resort, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for Grandview Resort* describes factors used to assess the well's susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Grandview Resort is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

**Well Construction.** Drinking water for Grandview resort comes from a well located in an open landscaped area 100 feet from the shore of Priest Lake. The 29-unit motel and restaurant overlook Reeder Bay near Nordman, Idaho. The well was test drilled through 95 feet of sand and gravel, then bedrock to a depth of 650 feet in December 1989. The casing was pulled back to 64 feet. Completed in 1990, the well has a 6-inch steel casing extending from 18 inches above ground to 65 feet and is screened from 55 to 65 feet below the surface. First ground water was encountered at a depth of 32 feet. The static water level in the well is at 13 feet. The well produces about 25 gpm. The surface seal on the Grandview well is 18 feet deep. Current Idaho Department of Water Resources standards require a minimum surface seal depth of 20 feet for public drinking water wells in unconsolidated formations.

Grandview was in substantial compliance with *Idaho Rules for Public Drinking Water Systems* when it was inspected in June 1999. The sanitary survey noted no deficiencies in well head and surface seal maintenance. A vent on the well head needed to be shortened.

**Well Site Characteristics.** Soils in the well recharge zone for Grandview are generally well drained. Well logs show deep gravel and sand beds with thin lenses of silt and clay overlying bedrock. Well-drained soils provide little protection against migration of contaminants toward the well.

**Potential Contaminant Inventory.** Land use inside the protection zone delineated for the Grandview well is recreational. In addition to the resort the delineated area contains several private homes with individual septic systems. Septic systems are potential sources of inorganic chemical contaminants like nitrate in addition of viruses and bacteria. High volume systems serving multiple users and concentrations of individual systems exceeding 10 in 40 acres are counted as significant potential sources of microbial and inorganic chemical contaminants.

**Water Quality History.** Grandview Resort has had few water quality problems. Quarterly tests for total coliform bacteria were all negative in the period from January 1998 through the present. Annual tests for nitrates show concentrations ranging between 1.09 and 2.29 mg/l. The Maximum contaminant Level (MCL) for nitrate is 10 mg/l.

**Susceptibility to Contamination.** An analysis of the Grandview Resort well, incorporating information from the public water system file and the potential contaminant inventory, ranked the well moderately susceptible to all classes of regulated contaminants. Most of the points marked against the well are due to natural risk factors related to local geology. The complete analysis worksheet for your well is on page 6 of this report. Formulas used to compute the final susceptibility scores are at the bottom of the worksheet.

**Source Water Protection.** This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

The Grandview resort well has a good water quality history. Continuing to maintain and operate the system in compliance with *Idaho Rules for Public Drinking Water Systems* is the best drinking water protection for the resort.

A voluntary measure every system should employ is development of an emergency response plan. There is a simple, fill-in-the-blanks form available on the DEQ website ([www.deq.state.id.us/water/water1.htm](http://www.deq.state.id.us/water/water1.htm)) to guide systems through the emergency planning process.

The resort should also investigate ground water protection programs like Home\*A\*Syst. Home\*A\*Syst is designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include septic tank management, petroleum product storage, handling and storing lawn and household chemicals and similar activities. Because Grandview may not have direct jurisdiction over the entire recharge zone for its well, it will be important to form partnerships with neighboring landowners, and public agencies to regulate land uses that can degrade ground water quality. The goal of source water protection is to maintain current water quality for the future despite the changes we can expect with population growth in North Idaho.

## **Assistance.**

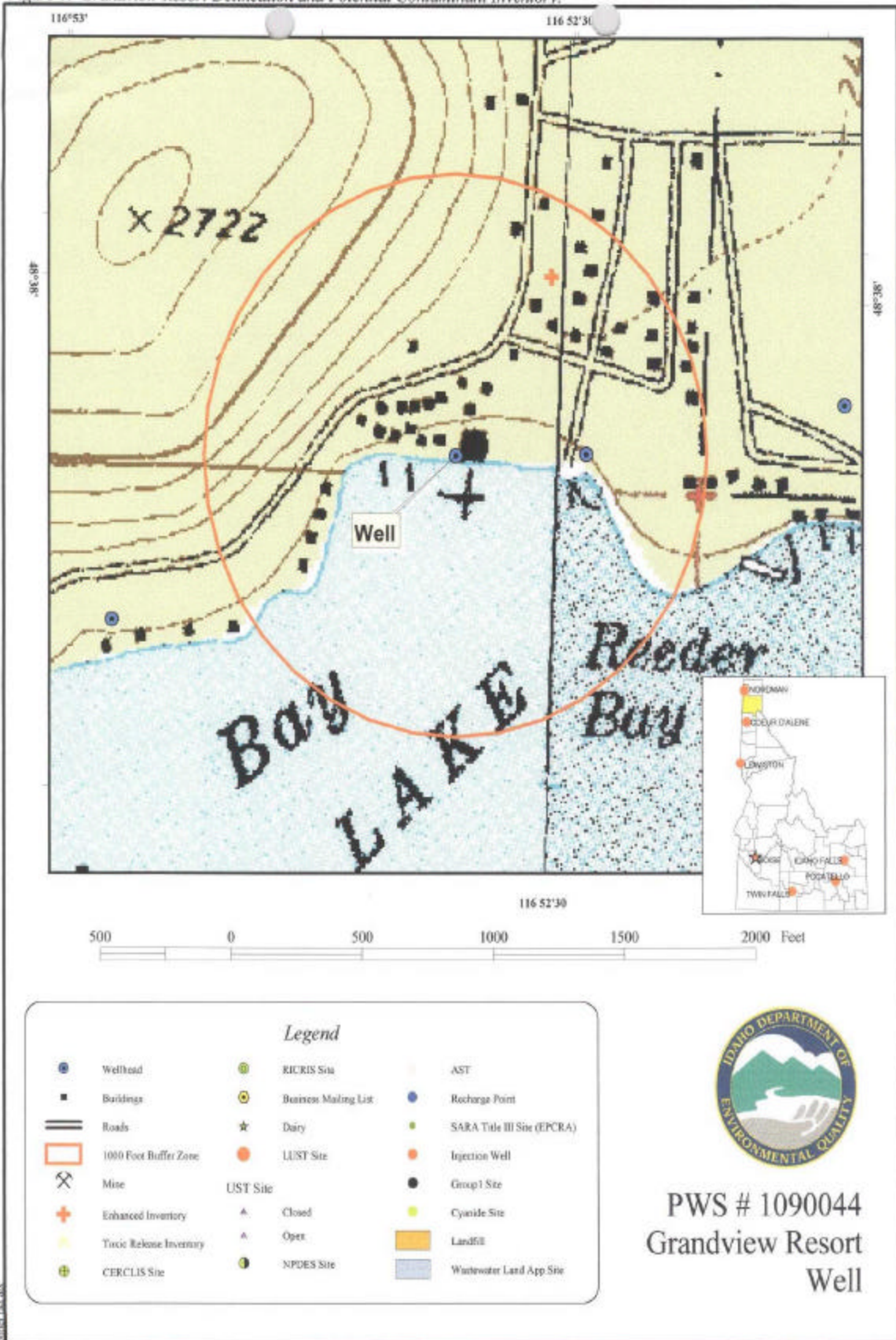
Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office                      (208) 769-1422

State IDEQ Office    (208) 373-0502

Website:    [www.deq.state.id.us/water/water1.htm](http://www.deq.state.id.us/water/water1.htm)

Figure 1. Grandview Resort Delineation and Potential Contaminant Inventory.



## Ground Water Susceptibility

Public Water System Name :

GRANDVIEW RESORT

Well # :

WELL #1

Public Water System Number :

1090044

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1. System Construction		SCORE			
Drill Date	2/28/90				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 1999				
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
<b>Total System Construction Score</b>		<b>4</b>			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
<b>Total Hydrologic Score</b>		<b>6</b>			
3. Potential Contaminant / Land Use		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use 1000-Foot Radius	RECREATION	1	1	1	1
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO	NO	NO	NO	NO
<b>Sub Total Potential Contaminant Source/Land Use Score</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
Potential Contaminant / Land Use - 1000-FOOT RADIUS					
Contaminant sources present (Number of Sources)	SEPTIC SYSTEMS	1	0	0	1
(Score = # Sources X 2 ) 8 Points Maximum		2	0	0	2
Sources of Class II or III leacheable contaminants or Microbials	YES	1	0	0	1
4 Points Maximum		1	0	0	
1000-Foot Radius contains or intercepts a Group 1 Area	NO	0	0	0	0
Agrucultural Land use 1000-Foot Radius	Less Than 25% Agricultural Land	0	0	0	0
<b>Sub Total Potential Contaminant Source / Land Use Score - 1000-Foot Radius</b>		<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>4</b>	<b>1</b>	<b>1</b>	<b>4</b>
<b>4. Final Susceptibility Source Score</b>		<b>11</b>	<b>10</b>	<b>10</b>	<b>11</b>
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

### Final Susceptibility Ranking:

0 - 5 Low Susceptibility  
 6 - 12 Moderate Susceptibility  
 > 13 High Susceptibility

## POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ? Superfund? is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.